



The Chemours Company
Fayetteville Works
22828 NC Highway 87 W
Fayetteville, NC 28306

September 10, 2021

Heather S. Carter
Fayetteville Regional Supervisor
Division of Air Quality, NC DEQ
225 Green Street, Suite 714
Fayetteville, North Carolina 28301
Heather.Carter@ncdenr.gov

Re: Notice of Violation/Notice of Recommendation for Enforcement
Chemours Company - Fayetteville Works, Air Permit No. 03735T48
Fayetteville, Bladen County, NC 06/0900009 Fee Class: Title V

Dear Ms. Carter,

This letter is submitted on behalf of Chemours in response to the above-referenced Notice of Violation ("NOV") from NC DEQ's Division of Air Quality ("DAQ") dated August 26, 2021. DAQ issued the NOV under Air Permit No. 03735T48 (the "Air Permit") for Chemours's Fayetteville Works facility.

The Air Permit contains a facility-wide annual emission limit for GenX Compounds of 23.027 pounds per year, which constitutes a 99 percent reduction from the 2017 Total Reported Emissions of 2,302.7 pounds per year. As a result of Chemours's timely and successful implementation of the thermal oxidizer, carbon units, and other air emissions controls, Chemours's facility-wide GenX Compounds emissions were under this annual emission limit for calendar year 2020, the first year the limit was in effect. DAQ concurred in this conclusion in its letter to Chemours dated March 15, 2021.

As set forth further in this response below, in March 2021, Fayetteville Works had a temporary increase in GenX Compounds emissions from the Carbon Adsorber unit that treats indoor air from the Vinyl Ethers North process at the facility. Chemours took prompt action to resolve the issue by replacing the carbon in the Carbon Adsorber unit, and subsequent testing showed that emissions had returned to their usual lower levels. Chemours also engaged with DAQ proactively and transparently regarding the issue, and the Company has developed a series of actions to implement for continued, longer-term improvements for treating indoor air emissions from Vinyl Ethers North.

While GenX Compounds emissions have returned to their usual lower levels, the temporary increase in emissions in March 2021 has resulted in exceedance of the 23.027-pound annual emission limit, calculated on a 12-month rolling sum basis, as shown in the table below (this table was previously submitted by Chemours to DAQ on July 15, 2021):

<u>Chemours - Fayetteville Works GenX Emissions Summary</u>							
12-Month Rolling Emissions							
(Per Permit Condition 2.2.D.1)							
Month	Notes	Equipment / Fugitive Emissions (lbs)	Accidental Release Emissions (lbs)	Thermal Oxidizer Emissions (lbs)	Other Process Emissions (lbs)	Monthly Facility- Wide Emissions (lbs)	12-Month Rolling Sum of Facility-Wide Emissions (lbs)
January 2020	Actual	1.287	0.010	0.003	0.080	1.380	--
February 2020	Actual	0.498	0.000	0.001	0.157	0.656	--
March 2020	Actual	1.465	0.035	0.006	0.048	1.554	--
April 2020	Actual	1.086	0.000	0.004	0.136	1.226	--
May 2020	Actual	1.280	0.391	0.004	0.086	1.761	--
June 2020	Actual	1.626	0.084	0.007	0.037	1.754	--
July 2020	Actual	1.292	0.009	0.004	0.106	1.411	--
August 2020	Actual	0.309	0.000	0.001	0.018	0.328	--
September 2020	Actual	2.054	0.002	0.002	0.063	2.121	--
October 2020	Actual	0.000	0.000	0.000	0.020	0.020	--
November 2020	Actual	1.388	0.136	0.006	0.234	1.764	--
December 2020	Actual	1.152	0.029	0.007	0.200	1.389	15.366
January 2021	Actual	2.277	0.000	0.002	0.357	2.636	16.622
February 2021	Actual	1.220	0.122	0.005	0.309	1.656	17.622
March 2021	Actual	12.426	0.098	0.006	0.107	12.637	28.705
April 2021	Actual	2.299	0.000	0.002	0.102	2.403	29.881
May 2021	Actual	2.657	0.191	0.006	0.193	3.048	31.167
June 2021	Actual	2.287	0.195	0.007	0.122	2.611	32.024
<i>Annual Emissions Limitation</i>						<i>23.027</i>	

Chemours acknowledges that this emissions level represents an exceedance of the permit limit. DAQ indicates in the NOV that it is preparing an enforcement report that will include recommendations of any appropriate civil penalties. Chemours respectfully requests that in assessing any civil penalty for the exceedance, DAQ consider Chemours's proactivity and transparency in addressing the issue here, its use of good and reasonable operating practices for the Carbon Adsorber unit, as well as more broadly the entirety of the work Chemours has undertaken and continues to undertake to address and significantly reduce emissions and discharges of GenX Compounds and other PFAS from Fayetteville Works.

The remainder of this response furnishes the items of additional information requested by DAQ in the NOV and provides associated factual details and clarifications regarding the events described by DAQ in the NOV.

1. A detailed timeline of the events leading to the excess emissions from Carbon Adsorber ID No. NCD-Q3 which resulted in violations noted above.

Chemours has identified fine particles ("fines") from the Agitated Bed Reactor ("ABR") as the main contributing factor to the excess emissions in March 2021 from the Vinyl Ethers North indoor air Carbon Adsorber unit. These fines appear to have passed through the filters into the unit and then caused blockages in the carbon and carbon adsorber screens, reducing carbon treatment efficiency sooner than expected.

In August 2020, Chemours redirected the ABR carbonate transfer blower system vent from the roof to inside the Vinyl Ethers North building, which routes to the Carbon Adsorber unit. Chemours made this change so that air emissions from the ABR carbonate transfer blower system vent would: i) be treated by the Carbon Adsorber unit, and ii) not be a potential source of particulates contributing to stormwater impacts from the facility.

In October 2020, Chemours changed the carbon in the Carbon Adsorber unit. The last prior carbon changeout had been in October 2019. Quarterly testing during the period between these changeouts and then again in December 2020, following the October 2020 changeout, demonstrated usual low emissions levels for GenX Compounds.

On February 17 and 18, 2021, the feed line to the ABR became plugged, resulting in maintenance being performed on the unit and additional fines inside the Vinyl Ethers North building.

Chemours performed its next quarterly testing of emissions from the Carbon Adsorber unit on March 9, 2021. On March 31, 2021, Chemours received the testing results, showing higher GenX Compounds emissions than in the past. Chemours promptly contacted its vendor to change the carbon in the Carbon Adsorber unit, and the vendor performed the changeout on April 6, 2021, the vendor's earliest date of availability.¹ An additional carbon changeout was performed on May 5, 2021, and testing on May 17, 2021 showed GenX Compounds emissions from the Carbon Adsorber unit had returned to their usual lower levels.

2. All corrective actions Chemours has taken or plans to take to address and prevent further excess emissions.

As noted above, Chemours promptly changed the carbon in the Vinyl Ethers North indoor air Carbon Adsorber unit on April 6, 2021, following the receipt of the March testing results, and then changed the carbon again on May 5, 2021 (between production campaign change from PSEPVE to PPVE). On May 5, 2021, Chemours also cleaned the screens of the unit, and it routed the ABR carbonate transfer blower system vent to the tower trench and installed a spent hopper filter gasket to reduce fines inside the ABR room. Testing on May 17, 2021 showed that GenX Compounds emissions from the Carbon Adsorber unit had returned to their usual lower levels.

¹ Chemours's monitors alarmed for low exit pressure from the Carbon Adsorber unit in early April 2021, preceding the carbon changeout on April 6. After filters to the carbon bed were replaced, the alarm condition was resolved. Chemours conducts routine monitoring of the exit pressure from the Carbon Adsorber unit to ensure that the unit's structural integrity is not compromised. Chemours also conducts routine monitoring of the differential pressure of the Carbon Adsorber unit to ensure the proper operation of the carbon bed blower. The differential pressure and exit pressure are not indications of carbon treatment efficiency. Between January and June 2021, differential and exit pressure varied between production campaigns and did not indicate improper operation of the carbon bed blower.

Chemours has also developed a series of actions to implement for continued, longer-term improvements for treating indoor air emissions from Vinyl Ethers North. Chemours has adjusted its interim carbon changeout schedule for the Carbon Adsorber unit to increase the frequency of changeouts moving forward—specifically, changeouts will be performed at least every three months or after every PSEPVE production campaign, if that occurs sooner (as PSEPVE production may result in tacky fines entering the carbon). Additionally, Chemours has implemented or plans to implement the actions shown in the table below:

<u>Planned Action</u>	<u>Anticipated Timing</u>
Upgrade ABR Room Filter and Elements – to reduce fines in VEN building	Completed September 9, 2021
Increase Use of Helium Testing – for leak identification	Completed September 9, 2021
Upgrade Control Valves with Bellows Packing – for leak reduction	October 2021 facility turnaround (“TAR”)
Replace Manual Valves with Low Emissions Packing – for leak reduction	October 2021 TAR and first half 2022
Receipt of FLIR Cameras – for leak identification	First half 2022
Install Differential Pressure Readings on Filters in Carbonate Service – to monitor for filter changes	First half 2022
Replace Carbonate Exhaust Blower Filter – to reduce fines in VEN building	Second half 2022
Replace ABR Bag Filter – to reduce fines in VEN building	Second half 2022
Replace Tubing with Hard Pipe – for leak reduction	Second half 2022
Replace Threaded Connections with Flanged Connections – for leak reduction	Second half 2022

3. A detailed plan of action and timeline to return the Fayetteville Works facility to compliance with all permit requirements.

As noted above, testing following Chemours’s carbon changeouts shows that GenX Compounds emissions from the Vinyl Ethers North indoor air Carbon Adsorber unit returned to their usual lower levels. The increased frequency of carbon changeouts and series of additional actions outlined in response to item #2 above are expected to further control indoor air emissions from Vinyl Ethers North.

While GenX Compounds emissions have returned to their usual lower levels, the temporary increase in emissions in March 2021 will continue to impact the facility’s 12-month rolling emissions sum under the Air Permit. Because of the 12-month rolling calculation, the calculated annual emissions may not return to below 23.027 pounds until approximately March 2022. Chemours will continue to report its GenX Compounds emissions quarterly as required by the Air Permit and expects monthly emissions amounts to continue to remain at their usual lower levels.

Chemours is continuing to assess whether any additional emissions reductions can be made, on top of the substantial reductions already achieved by the thermal oxidizer, carbon units, and other emissions controls implemented at the facility. In particular, Chemours is continuing to evaluate and refine its Enhanced Leak Detection and Repair (“LDAR”) program for fugitive emissions. As identified above, Chemours plans to purchase FLIR cameras to detect and repair leaks more frequently than under the current monitoring program, and the Company is also evaluating potential adjustments to the methodology for calculating fugitive emissions once the FLIR cameras are in use. Chemours will continue to keep DAQ informed with respect to these matters.

4. Any additional information regarding the cited violations for the DAQ Director’s consideration prior to civil penalty assessment.

Chemours respectfully requests that in assessing any civil penalty for the emissions exceedance, DAQ consider Chemours’s proactivity and transparency in addressing the issue, as set forth in this response and in prior correspondences and communications with DAQ. In particular, Chemours notes that in its April 28, 2021 quarterly report of GenX Compounds emissions under the Air Permit, it specifically highlighted for DAQ the higher emissions from the March 2021 testing of the Vinyl Ethers North indoor air Carbon Adsorber unit, the subsequent carbon changeout, and plans for retesting. The emissions figures presented in the April 28th report were calculated using a test-averaging methodology previously approved by DAQ (see DAQ’s March 15, 2021 letter to Chemours, stating that Chemours’s submissions “follow established practices and procedures for emission estimation calculations”). Chemours then engaged with DAQ regarding the calculations, including at a technical meeting on June 24, 2021, agreed to revise its emissions calculations using a test-to-test methodology, and submitted revised emissions figures using that new methodology on July 15, 2021. Thus, any suggestion that Chemours had previously been using an unauthorized methodology is without basis.

Chemours also respectfully submits that it did not violate General Condition 3.F of the Air Permit, as alleged by DAQ in the NOV. The NOV does not identify a finding from DAQ’s investigation that supports this alleged violation. This general condition of the Air Permit is entitled “Circumvention” and states: “The facility shall be properly operated and maintained at all times in a manner that will effect an overall reduction in air pollution. Unless otherwise specified by this permit, no emission source may be operated without the concurrent operation of its associated air pollution control device(s) and appurtenances.” The Fayetteville Works facility has been properly operated and maintained to achieve a substantial overall reduction in air pollution—for example, facility-wide 12-month GenX Compounds emissions were still over 98.6% lower than the 2017 Total Reported Emissions as calculated for the 12-month periods ending in any of March, April, May, or June 2021.² Further, while the Vinyl Ethers North indoor

² Another way to look at the exceedance is that the Air Permit required a reduction in GenX Compounds emissions of 2,279.7 pounds, which Chemours met in 2020. The 12-month rolling sum of GenX Compounds emissions through June 2021 is a reduction of 2,270.7 pounds.

air Carbon Adsorber experienced a temporary reduction in efficiency, it still remained in operation and continued to treat emissions. Accordingly, General Condition 3.F is not an appropriate permit condition to reference in the NOV.

Chemours also asks DAQ, in assessing any civil penalty, to consider broadly the entirety of the work Chemours has undertaken and continues to undertake to address and significantly reduce emissions and discharges of GenX Compounds and other PFAS from Fayetteville Works. This includes not only the significant air emissions reductions Chemours has achieved (for example, as a result of installing and operating the thermal oxidizer), but also Chemours's continuing and comprehensive work under the Consent Order and Addendum to, among other things, reduce PFAS loadings from surface water and groundwater to the Cape Fear River, provide replacement drinking water supplies to qualifying residences and other private well users, and advance the state of science on PFAS.

Finally, Chemours respectfully requests that any civil penalty assessment here be consistent with DAQ's penalty assessments for air permit emissions exceedances at other facilities in North Carolina.

If you have any questions about the information provided herein or would like to discuss this matter further, please contact me at Dawn.M.Hughes-1@chemours.com.

Sincerely,



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Cc:

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